Volunteer Lake Assessment Program Individual Lake Reports

RESERVOIR POND, DORCHESTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	289	**Max. Depth (m):**	13.7	**Flushing Rate (yr^{1})**	0.4
Surface Area (Ac.):	111	**Mean Depth (m):**	3.8	**P Retention Coef:**	0.84
Shore Length (m):	3,700	**Volume (m^{3}):**	1,728,000	**Elevation (ft):**	1340

TROPHIC CLASSIFICATION

Year	Trophic class
1981	OLIGOTROPHIC
2001	OLIGOTROPHIC

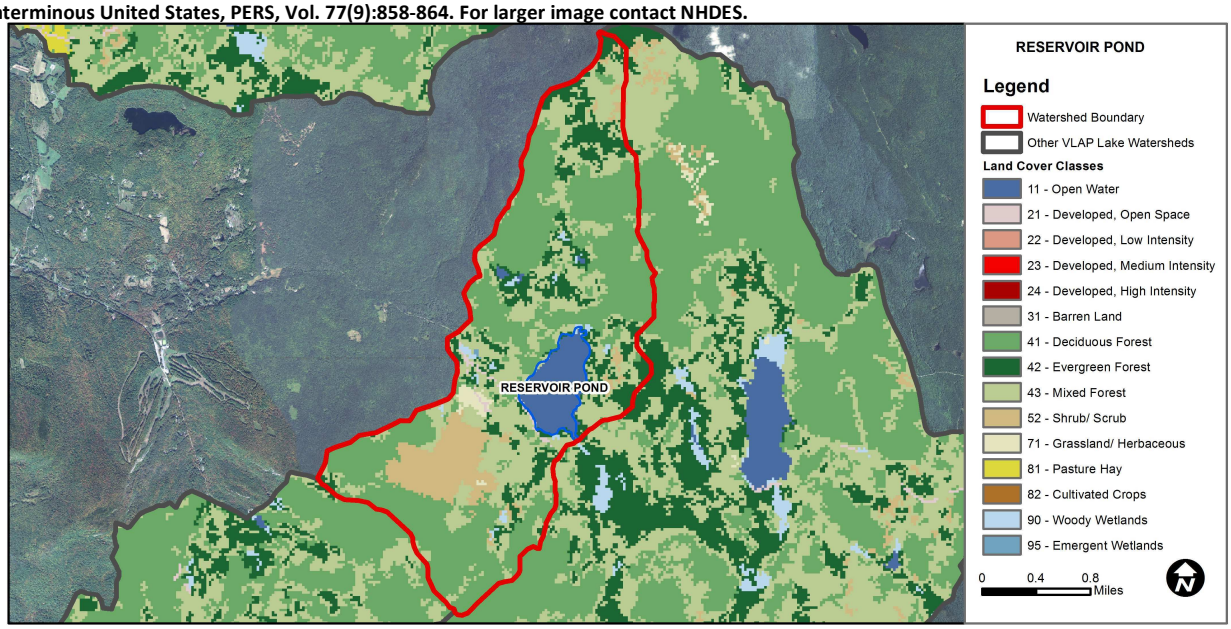
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	The calculated median is from 5 or more samples and is > indicator and the chlorophyll a indicator is exceeded.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	The calculated median is from 5 or more samples and is > indicator.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.66	Barren Land	0	Grassland/Herbaceous	0.75
Developed-Open Space	0.52	Deciduous Forest	42.36	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	13.48	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	28.03	Woody Wetlands	0.91
Developed-High Intensity	0	Shrub-Scrub	8.16	Emergent Wetlands	0.05

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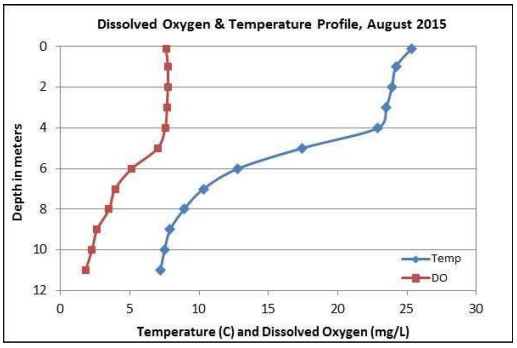
Reservoir Pond, Lyme

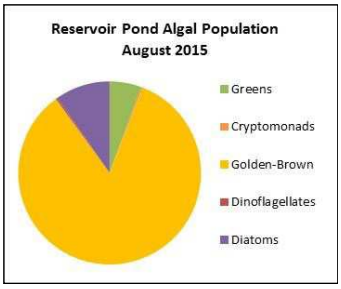
2015 Data Summary

Recommended Actions: Increase monitoring frequency to once per month during the summer to better assess seasonal and historical water quality trends and decrease data variability. Water quality was good in 2015 and phosphorus and chlorophyll levels have decreased in recent years, while transparency or water clarity has improved. We hope to see these trends continue!

Observations (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Chlorophyll-a:** Chlorophyll levels were low in August and much less than the state median. Historical trend analysis indicates relatively stable chlorophyll levels with moderate variability between years.
- **Conductivity/Chloride:** Deep spot and Outlet conductivity remained very low and much less than the state median. Cutter Brook and Townline Brook conductivity levels were slightly higher yet still below the state median. Historical trend analysis indicates highly variable epilimnetic (upper water layer) conductivity since monitoring began.
- **Total Phosphorus:** Epilimnetic and metalimnetic (middle water layer) phosphorus levels were very low and much less than the state median. Historical trend analysis indicates highly variable epilimnetic phosphorus levels since monitoring began. Hypolimnetic (lower water layer) phosphorus levels were slightly higher but within an average range for that station. Outlet and Townline Brook phosphorus levels were low to average. Cutter Brook phosphorus levels were slightly elevated and the turbidity was also slightly elevated indicating potential sediment and/or organic material that may have contributed to the phosphorus.
- **Transparency:** Transparency improved in 2015 and was better than the state median. Historical trend analysis indicates highly variable transparency since monitoring began. Transparency measured with the viewscope (VS) was much better than that measured without (NVS) and likely a better representation of actual conditions.
- **Turbidity:** Epilimnetic, metalimnetic, hypolimnetic, and Outlet turbidities were low. Cutter Brook and Townline Brook turbidities were elevated and field data note low flow conditions after a period of dry weather.
- **pH:** Epilimnetic, metalimnetic and hypolimnetic pH levels were less than the desirable range 6.5-8.0 units. Historical trend analysis indicates highly variable epilimnetic pH since monitoring began. Cutter Brook and Townline Brook pH levels were within the desirable range and Townline Brook pH levels have significantly increased (improved) since monitoring began.





Station Name	Table 1. 2015 Average Water Quality Data for RESERVOIR POND							
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
					NVS	VS		
Epilimnion	3.9	2.94	14.6	3	4.13	5.08	0.59	6.23
Metalimnion			14.2	3			0.64	6.13
Hypolimnion			16.4	9			1.11	5.58
Cutter Brook			29.4	22			5.60	6.64
Outlet			14.5	5			0.82	6.48
Townline Brook			33.3	11			10.30	6.70

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Stable	Trend not significant; data highly variable.	Transparency	Stable	Trend not significant; data highly variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.